Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

All claims currently being amended are shown with deleted text struckthrough or double bracketed and new text underlined. Additionally, the status of each claim is indicated in parenthetical expression following the claim number.

Claims 6 – 17 remain.

Claim 6 is being amended.

Claims 1 – 5, 9, 10, and 18 – 20 have been cancelled.

Claims 21 - 26 have been added.

WHAT IS CLAIMED IS:

1. – 5. (Cancelled)

6. (Currently Amended) A method of power supply voltage compensation in an amplifier having a noise shaper including a loop filter and a quantizer and an output stage operating between first and second voltages, comprising:

measuring an analog difference of first and second voltages;

measuring an analog sum of the first and second voltages; [and]

converting the analog difference to a digital difference; and

converting the analog sum to a digital sum;

providing the digital [[measured]] sum and difference of the first and second voltages to the noise shaper for compensating for variations in the first and second voltages.

]7. (Currently Amended) The method of Claim 6, further comprising:

subtracting [[the]] a measured average value of the first and second voltages from an output of the noise shaper loop filter;

dividing the result of the subtraction by the measured difference; and

providing the result of the division to an input of the quantizer.

8. (Original) The method of Claim 6, further comprising:

multiplying an output of the quantizer by the measured difference;

adding a result of the multiplication to the measured average; and

feeding-back a result of the addition to an input of the noise shaper.

9. (Cancelled)

10. (Cancelled)

11. (Original) The method of Claim 6, further comprising adding an offset compensation factor to the difference.

12. (Original) The method of Claim 11, further comprising trimming the offset compensation factor comprising:

applying a selected value to an input of the amplifier;

measuring noise at an output of the amplifier; and

trimming the offset compensation factor to minimize the measured noise.

13. (Original) The method of Claim 12, wherein applying a selected value to the input of the amplifier comprises applying a zero-value.

14. (Original) The method of Claim 6, further comprising multiplying the measured sum by a gain compensation factor.

15. (Original) The method of Claim 14, further comprising trimming the gain compensation factor comprising:

applying a selected signal to an input of the amplifier;

measuring noise at an output of the amplifier; and

trimming the gain compensation factor to minimize the measured noise.

16. (Original) The method of Claim 15, wherein applying a selected signal to the input of the amplifier comprises applying a sine wave.

17. (Original) The method of Claim 6, further comprising adding a selected amount of noise to a selected one of the first and second voltages prior to measuring the sum and difference.

18. – 20. (Cancelled)

21. (New) A method of power supply voltage compensation in an amplifier having a noise shaper including a loop filter and a quantizer and an output stage operating between first and second voltages, comprising:

measuring a difference of first and second voltages;

measuring a sum of the first and second voltages; and

providing the measured sum and difference of the first and second voltages to the noise shaper for compensating for variations in the first and second voltages, comprising:

subtracting an average value of the first and second voltages from an output of the noise shaper loop filter;

dividing the result of the subtraction by the measured difference; and

providing the result of the division to an input of the quantizer.

22. (New) The method of Claim 21, wherein measuring the sum and difference of the first and second voltages comprise:

converting the first and second voltages to first and second digital voltages;

taking the difference of the first and second digital voltages; and

taking the sum of the first and second digital voltages.

23. (New) The method of Claim 21, wherein measuring the sum and difference of the first and second voltages comprise:

taking the analog difference between the first and second voltages;

taking the analog sum of the first and second voltages;

converting the analog difference to a digital difference; and

converting the analog sum to a digital sum.

24. (New) A method of power supply voltage compensation in an amplifier having a noise shaper including a loop filter and a quantizer and an output stage operating between first and second voltages, comprising:

measuring a difference of first and second voltages;

measuring a sum of the first and second voltages; and

providing the measured sum and difference of the first and second voltages to the noise shaper for compensating for variations in the first and second voltages, comprising:

multiplying an output of the quantizer by the measured difference;

adding a result of the multiplication to an average of the first and second voltages; and

feeding-back a result of the addition to an input of the noise shaper.

25. (New) The method of Claim 24, wherein measuring the sum and difference of the first and second voltages comprise:

converting the first and second voltages to first and second digital voltages;

taking the difference of the first and second digital voltages; and

taking the sum of the first and second digital voltages.

26. (New) The method of Claim 24, wherein measuring the sum and difference of the first and second voltages comprise:

taking the analog difference between the first and second voltages;

taking the analog sum of the first and second voltages;

converting the analog difference to a digital difference; and

converting the analog sum to a digital sum.